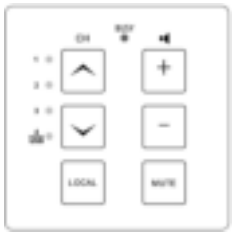
RZ45 + TR86

REMOTE ZONE AUDIO MATRIX

Item ref. RZ45: 953.045UK
TR86: 953.050UK

(optional CS-5 call station: 953.049UK)

User Manual



Version 1.1

⚠	Caution: Please read this manual carefully before operating Damage caused by misuse is not covered by the warranty

Introduction

Thank you for choosing the Adastra RZ45 remote audio matrix system for your distributed audio installation.
This unit is designed to offer a flexible and expandable solution for a wide array of commercial sound systems.
Please read this manual to gain the best results from your product and avoid damage through misuse.

SAFETY SYMBOL AND MESSAGE CONVENTIONS

CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	AVIS RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR

This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit

This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

SAFETY NOTICE

1. Prior to use, read through this manual
2. Keep the manual in good condition
3. Pay attention to safety warnings
4. Observe all operating requirements
5. Do not use the device near water or wet areas
6. For cleaning, only use a lint-free, dry cloth
7. Install according to the specifications
8. Place away from heat sources or heating appliances
9. Use mains lead provided and avoid damage to cable or connectors
10. Unplug power from mains during stormy weather or if unused for long periods
11. In case of malfunction, water ingress or other damage, consult qualified service personnel
12. Do not place in damp areas or near liquids or moisture. Do not spill liquids on the housing
13. Please pay attention to warning symbols during transit and placement
14. Terminals marked with the ⏚ symbol are HAZARDOUS LIVE and should only be connected by qualified personnel
15. Ensure that the apparatus is connected to a mains socket with a protective EARTH connection
16. Ensure correct operation of the mains switch

Warning

To prevent the risk of fire or electric shock, do not expose any components to rain or moisture.
If liquids are spilled on the casing, stop using immediately, allow unit to dry out and have checked by qualified personnel before further use. Avoid impact, extreme pressure or heavy vibration to the case
No user serviceable parts inside – Do not open the case – refer all servicing to qualified service personnel.

Safety

- Check for correct mains voltage and condition of IEC lead before connecting to power outlet

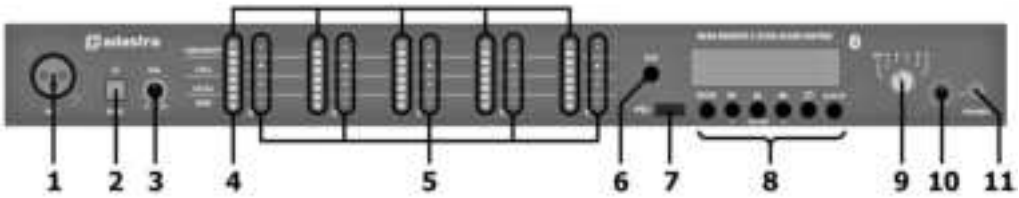
Placement

- This unit can be used free-standing or fixed into a 19" rack
- Ensure adequate support and access to controls and connectors when rack-mounting

Cleaning

- Use a soft cloth with a neutral detergent to clean the housing as required
- Do not use strong solvents for cleaning the unit

Front panel



1. Paging microphone input (XLR)
2. Page on/off button & indicator
3. Paging microphone level
4. Output zones level indicators
5. Output zones source indicators
6. Stereo AUX input (3.5mm jack)
7. USB port
8. Media player controls & display
9. Monitor zone select
10. Monitor level
11. Monitor headphones output (3.5mm jack)

Rear panel

12. TR86 remote control inputs (RJ45)
13. CS-5 call station input (RJ45)
14. 24Vdc emergency mute contacts
15. Emergency audio line input contacts
16. Zone outputs (L+R RCA)
17. Line input levels
18. Line inputs (L+R RCA)
19. +24V phantom power (to paging mic)
20. Paging microphone rear input (XLR)
21. Mains power on/off switch
22. Mains power inlet (IEC) with fuse holder

Connection

Ensure the Power (21) is switched off until all input and output connections are in place.

The RZ45 is supplied with a TR86 wall remote control, which is required to operate one of the output zones. Up to 4 more TR86 wall remote controls can be added to the system, depending on how many zones are being deployed. Connect the supplied TR86 remote to one of the remote inputs (12) on the RZ45 rear panel using standard network cable.

For remote announcement to all or any zones, an optional CS-5 call station (953.049UK) can be added to the system. If a CS-5 call station is being used, connect this to the call station input (13) on the rear panel using network cable.

For announcements to all zones from the main RZ45 unit, a paging microphone input is provided on the front or rear panel (1, 20). If the paging microphone requires phantom power (e.g. condenser mic), enable this by pressing in the phantom power button (19)

Each TR86 remote control can select an audio source from 1, 2, 3 or 4/USB. Audio sources 1, 2 and 3 are line inputs which can be connected to the rear panel of the RZ45 via L+R RCA sockets (18). The output level for each of these can be trimmed using rotary level controls (17) to avoid overloading the zone output.

Audio source 4 is labelled as 4/USB, since it is fed from the internal media player, which can playback files from USB or Bluetooth. Further details for media player operation are included further along in this manual.

Connect the output for each zone to a stereo or mono amplifier or active speakers via the L+R RCA sockets on the rear panel (16). Note: only zones with a TR86 remote connected will be controllable.

If available, connect a 24Vdc trigger from an emergency alarm panel (e.g. fire alarm) to the 24V mute contacts on the rear panel (14). This will mute all except the paging microphone and the EMG Audio input when the alarm is activated and sends 24V to the contacts.
(The 24V contacts can be connected with either polarity +/- or -/+ to operate)

The EMG Audio input is an unbalanced line input via screw terminals, which is enabled to all zones during emergency triggering. A pre-recorded evacuation message or siren recording may be continually played into this input but will not be heard until triggered.

Connect mains power to the RZ45 using the IEC power leads provided (or equivalent), ensuring correct voltage as indicated (22)

Powering up

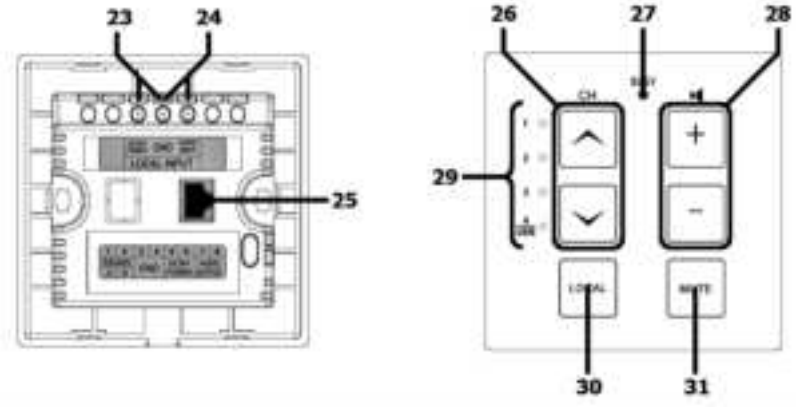
Ensure that all connected amplifiers or active speakers are switched off before powering up the RZ45
Switch on the power (21) and the front panel indicators should light. Power up connected equipment and turn volumes up part way.

TR86 Remote Control

Each active zone will need a TR86 wall mounted remote control connected to the RJ45 sockets on the rear panel of the RZ45. Only one TR86 is supplied with the RZ45 system but up to 5 may be connected to activate as many zones as are required.

Additional TR86 remote units are available separately (953.050UK). The TR86 is touch operated with a toughened glass surface and is designed to fit into a single gang 86 x 86mm back box (supplied)

Rear **Front**



23 Local DC power input (24Vdc)
24 Local audio input (unbalanced line)
25 RJ45 remote connection
26 Source select pads
27 BUSY indicator
28 Volume up/down pads
29 Audio source indicators
30 LOCAL audio override
31 MUTE audio

Connect the TR86 to the RZ45 via a network cable with RJ45 connection (25). This will deliver power to the TR86 for up to 100m. For longer cable runs up to 1km, the TR86 will require separate local 24Vdc power supplied to the screw contacts at the rear (23)

Tapping the up and down source select pads (26) will cause the audio source for the zone to step through 1, 2, 3 and 4/USB. The active audio source is indicated by LEDs at the side of the source select pads (29)

The front panel of the main RZ45 unit has LEDs to show the audio source status for each zone (5) along with LED level meters (4) "BGM" is short for "Background Music" and is the normal status where the TR86 remote selects the audio source.

Likewise, "LOCAL" shows that the TR86 is providing the local audio source for its zone. Further status LEDs for "CALL" or "EMG/MUTE" are lit when the zone is called from a CS-5 call station or Emergency Mute is triggered.

To adjust the output level for the zone, tap the "+" or "-" pads (28) which will step through volume levels in increments. Note that when a new source is selected, the volume is re-set to low level to avoid abrupt loud output to the zone. To mute the selected audio source, tap the MUTE pad (31) which will light when activated. Un-muting returns to the previous volume.

An optional local mono audio source may be connected to the rear of the TR86 via screw terminals (24)
Note that this shares the GROUND connection with the 24Vdc power input. The local input source is unbalanced line level (0.775Vrms @ 0dB) and can be wired to a wall plate with an audio connector for AUX in.

Tapping the LOCAL pad (30) will override other line input sources and select the local line input (the LOCAL pad will light)

When paging directly from the RZ45 or CS-5 call station, the selected audio source will be muted and the BUSY indicator will light (27). The same override occurs when the emergency 24Vdc contacts are triggered.

System checking

To check outputs to each zone in turn, connect a set of stereo headphones to the monitor output jack (11)
Turn down the monitor level (10) before wearing the headphones and select an active zone via the monitor zone selector (9)

Gradually increase the monitor level to avoid hearing damage and turn up to the required volume for clear audibility. Select through each zone in turn, checking for output.

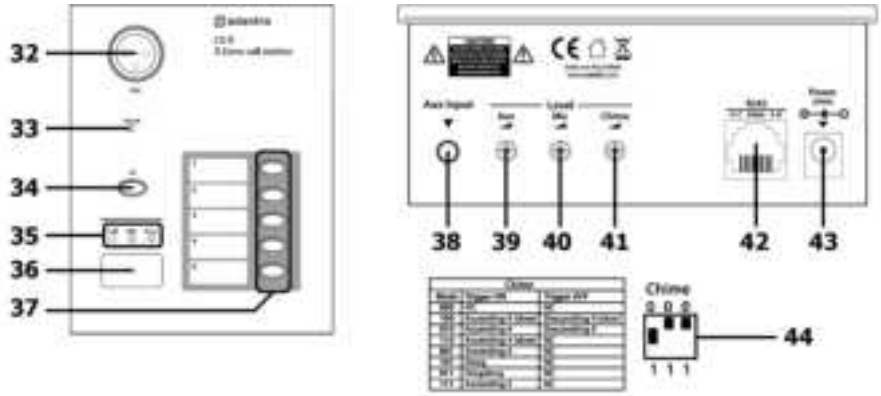
If a paging microphone is connected, this can be used to check for output on all channels. Turn the paging microphone level down (3). Many paging microphones have their own paging button, which should be left switched on. Push in the PAGE button (2) and speak into the paging microphone, whilst gradually increasing the paging mic level as required.

Each TR86 remote will have the BUSY indicator lit and each zone on the RZ45 will have the CALL indicator (5) lit on the front panel. The announcement will be heard on each zone. Check via the monitor headphones and on the sound system for each zone in turn.

If a CS-5 call station is connected to the RZ45 (see below), it can address all or any of the 5 output zones from the keypad. Press the required zone button(s) followed by the large green talk button and speak into the CS-5 microphone.

CS-5 call station (optional)

For independent paging to any combination of zones from a remote location, an optional CS-5 call station is available (953.049UK). The CS-5 connects to the RZ45 rear panel via network cable in a similar way to the TR86 remote controls.



32 seneck microphone XLR
33 Signal indicator
34 Select all zones
35 Status indicators
36 Call button
37 Zone select buttons
38 Auxiliary line input
39 Auxiliary line level
40 Mic level
41 Chime level
42 RJ45 connection to RZ45
43 DC power input
44 Chime setting DIP switches

Connect the CS-5 call station via network cable (42) to the RZ45 before the system is powered up to avoid damage to the system. As with the TR86 remote, the CS-5 call station requires a separate 24Vdc power supply if the network cable run is longer than 100m. This can enable the CS-5 call station to operate up to 1km away from the main RZ45 unit when 24Vdc power is supplied to it (43)

Connect the CS-5 gooseneck microphone to the base unit, ensuring that it is secured and properly connected (32) before powering up.

The underside of the CS-5 base unit has 3 DIP switches (44) for setting the internal chime that is activated when a call is made. There is a 3.5mm AUX input on the rear of the CS-5 base unit with a dedicated volume control. Connect a line level audio source, such as smart phone or laptop, to play back recorded audio messages or music to paged zones. Also on the rear of the base unit are volume controls for the call station microphone and internal chime.

Once all connections are made, power up the RZ45 system and then any connected equipment and set volume levels as required.

To call any combination of zones from the CS-5, select the zones on the zone select buttons (37) and the relevant LEDs will light. An "ALL" button is provided as a quick way of selecting all zones together (34)

When the required zones are selected, press the call button (36) and if a chime is set, this will be played to the selected zones. The CS-5 microphone will now be live to these zones and each zone will show "BUSY" on its TR86 remote and its audio will be muted. The call status is confirmed by LED indicators above the call button (35)

Pressing the Page button again will deactivate the microphone and all zones will be reset back to their previous settings.

Media player

The RZ45 built-in media player can play standard compressed audio files stored on a USB memory device (formatted to FAT32). Insert the USB device into the USB port (7) to start playback of audio files stored on the device. Navigate and control the playback using Previous, Play/Pause, Next and Repeat buttons (⏮, ⏵⏸, ⏭ and 🔁)

The media player can also playback audio from a smart phone or tablet via Bluetooth wireless connection. To pair a device to the RZ45, press the MODE button until "bt" appears in the LCD display.
On the smart phone or tablet, search for the Bluetooth device called "**adastra**" and select to pair and connect. Once connected, playback from the device can be navigated by the Previous, Play/Pause and Next buttons (⏮, ⏵⏸ and ⏭)

Connecting an external device to the 3.5mm AUX jack socket (2) allows playback of stereo line level audio through the media player.

Pressing the MUTE button will mute the output of the media player, holding this button will switch the media player on or off. A key for the media player source selection and navigation is shown below. Bold text indicates text shown on the display.

MODE	⏮	⏵⏸	⏭	🔁
bt = Bluetooth	Previous track	Play/Pause track	Next track	**ONE** = repeat track
LOAD = loading USB	Hold = vol down	AUX mode = Mute	Hold = vol up	**rND** = random play
AUX = Aux line input				**ALL** = repeat all

Ensure that the volume of all connected equipment is turned down before powering the RZ45 down to avoid damage to the system.

Specifications – RZ45 main unit

Power supply	100-240Vac, 50/60Hz (IEC)
Fuse	T1AL
Audio source	USB/Bluetooth media player
Bluetooth version	v2.0
Inputs	Paging mic. (XLR) + 3 x stereo line (RCA)
Mic input: sensitivity	-41dBV
Line input: sensitivity	-12.5dBV
Call station input: sensitivity	+4dBV
Emergency control	24V mute contacts and emergency audio input
EMG input: sensitivity	-10dBV
Signal to noise ratio: mic	65dB
Signal to noise ratio: line	73dB
Outputs	5 x stereo zones (RCA)
Output impedance: line	600 ohms
THD +N	<0.1% @ 1kHz
Monitor outputs	Stereo 3.5mm headphone jack (assignable)
Phantom power	+24V switchable for paging mic.
Remote control connection	8P8C (RJ45)
Frequency response: ±3dB	20Hz - 20kHz
Attenuation	-30dB (paging)
Dimensions	483 x 177 x 44mm
Weight	1.76kg

Specifications - TR86 Remote

Power supply	24Vdc (from RJ45 connector or separate 24Vdc adaptor)
Max. connection length	100m (network cable) or 1km with optional 24Vdc adaptor
Connection	8P8C (RJ45)
Terminals	Local +24V, Ground, Local line input
Controls	Sources 1-4 (USB), Local, Mute, Level +/-
Mounting depth	38mm
Dimensions	86 x 86 x 38mm
Weight	128g

Specifications – Optional CS-5 Call Station

Power supply	24Vdc, 500mA (from RJ45 connector or separate 24Vdc adaptor)
Max. connection length	100m (network cable) or 1km with optional 24Vdc adaptor
Capsule	Back electret condenser
Polar pattern	Cardioid
Controls	Aux/Mic/Chime levels, chime DIP switches, zone/call/reset buttons
Connectors	RJ45 (8P8C) to RZ45, 24Vdc power jack, 3.5mm aux in
Frequency response: -3dB	150Hz - 22kHz
Input level	Mic: -46dBV, Aux: -10dBV
Input impedance	Mic: 600 Ohms, Aux: 50k Ohms
Output level	10dBV
Output impedance: balanced	600 Ohms
S/N ratio	-60dB (all channels selected)
Interface	RS-485 control
Zone assign	5 zones individually or All zones selectable
Dimensions	460 x 140 x 115mm
Weight	670g

Disposal: The "Crossed Wheelie Bin" symbol on the product means that the product is classed as Electrical or Electronic equipment and should not be disposed with other household or commercial waste at the end of its useful life. The goods must be disposed of according to your local council guidelines.

Hereby, AVSL Group Ltd. declares that the radio equipment type 953.045UK is in compliance with Directive 2014/53/EU

The full text of the EU declaration of conformity for 953.045UK is available at the following internet address:
http://www.avsl.com/assets/exportdoc/9/5/953045UK%20CE.pdf

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